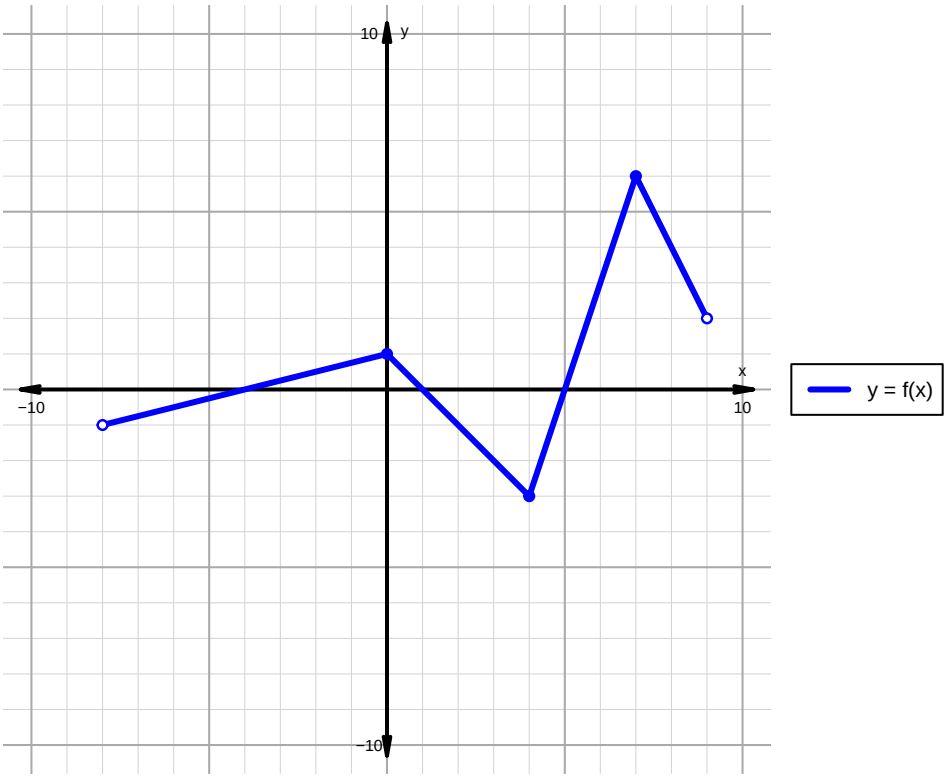
Name: Date:

Intervals, Transformations, and Slope Solution (version 165)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-4, 1) \cup (5, 9)$
Negative	$(-8, -4) \cup (1, 5)$
Increasing	$(-8, 0) \cup (4, 7)$
Decreasing	$(0, 4) \cup (7, 9)$
Domain	$(-8, 9)$
Range	$(-3, 6)$

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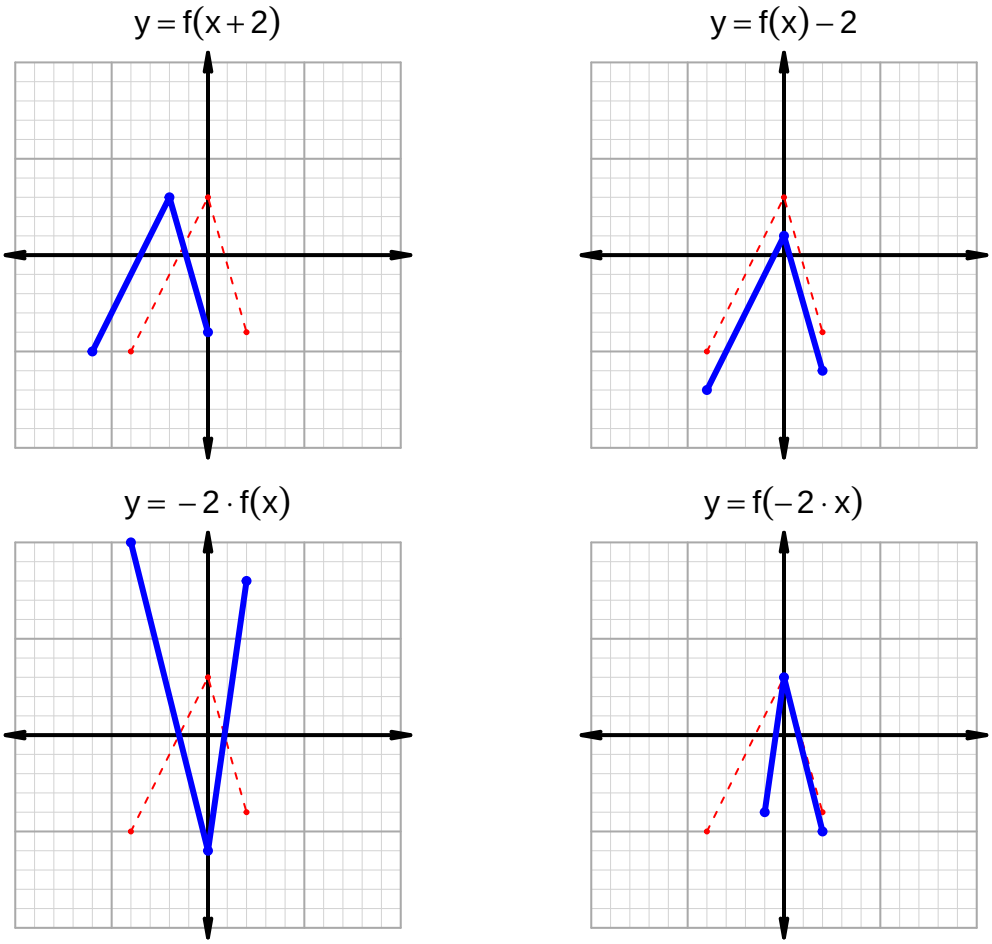
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 42$ and $x_2 = 63$. Express your answer as a reduced fraction.

x	$g(x)$
40	63
42	40
55	42
63	55

$\frac{g(63)-g(42)}{63-42} = \frac{55-40}{63-42} = \frac{15}{21}$

The greatest common factor of 15 and 21 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{5}{7}$$